

#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
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January 26, 2009

Mr. John Brent
Fort Benning Directorate of Public Works
Environmental Management System
Meloy Hall (Bldg 6), Room 310
Fort Benning, GA 31905

Subject: EPA NEPA Comments on Department of the Army (DOA) Draft Environmental

Impact Statement (EIS) for the Maneuver Center of Excellence (MCOE), Fort Benning, Georgia; CEQ No. 20080506; ERP No. USA-E11069-GA

Dear Mr. Brent:

To fulfill EPA's Clean Air Act (CAA) § 309 and National Environmental Policy Act (NEPA) § 102 (2)(C) responsibilities, EPA is enclosing its comments and providing an "environmental concerns (EC) -2" rating to the above draft EIS for the proposed action: EPA comments are supplemental to those already sent earlier regarding the BRAC 2005 and Transformation Actions EIS.<sup>2</sup>

# Background

Fort Benning comprises 181,275 acres located within three counties and two states and is primarily located within the Chattahoochee River Basin (CRB). Approximately 80% of Chattahoochee County, Georgia, is within the boundaries of the Fort. Of all of the Department of Defense (DOD) installations, it is the sixth largest in land area and the third largest in troop size. The Fort's November 2007 population baseline consisted of 26,500 military, civilian, and contractor personnel and 9,400 students as a daily average being trained on any one day. The net anticipated total population increase is expected to be: 43,114 military, civilian, and contractor personnel, and a daily average student population of 17,757.

Approximately eighty-six percent (157,025 acres) of the Fort, has been designated for training and maneuver areas: 48,171 acres for 83 light maneuver training areas, 62,958 acres for 86 heavy maneuver training areas 15,554 acres for a live-ordnance-impact area ("dudding", and 30,342 acres designated for a non-dudded impact area that can be used for light maneuver training.

Since the announcement of the November 2006 BRAC 2005 and Transformation EIS record-of-decision, new projects have been identified and some of the previously evaluated projects have had changed locations, sizes, and/or timing which are substantial enough to require

<sup>1</sup> See enclosed EPA rating system criteria definition document.

<sup>&</sup>lt;sup>2</sup> Letter dated 7 June 2007 addressed to Mr. John Brent. Many of the concerns in this comment letter remain and are incorporated into this DEIS by reference.

a re-evaluation. Almost 20 projects have changed location or grown in size. Most have changed location from the cantonment areas to the training areas and include ranges and installation-wide training-area road development. Several projects have grown in size: the vehicle recovery course (a.k.a. the Ground Mobility Division), the physical fitness center in Harmony Church, and the hospital replacement project in the Main Post.

According to the EIS, the Army Growth Campaign' objective is to permanently increase end strength by 65,000 active component soldiers by 2012, which translates into a gain of 35,000 soldiers authorized as a temporary increase and accommodated in Army Units across the U.S. This increase was scheduled in 7,000/year increments during 2008 - 2012. Fort Benning's share included 45 permanent-part military personnel and 73 military personnel in the 14<sup>th</sup> Combat Support Hospital, 19<sup>th</sup> Optometry Detachment, and the 497<sup>th</sup> Movement Control Team for a total temporary gain of 118 personnel.

Fort Benning has experienced an incremental growth of 20,000 primarily in the Infantry One Station Unit Training, and the Basic Combat Training has also seen an increased load. Therefore the Fort has already seen most of its growth impacts in its training load. One additional Initial Entry Training battalion is expected at the Fort, which translates into 120 cadre members and up to 1,200 Initial Entry Training soldiers per day (5 companies with 240 per company). The Fort will also see increased student numbers undertaking training at the following schools: Armor and Infantry, Officer Candidate, Army Airborne, and the Basic Officers Leaders Course.

The proposed action's purpose is to accommodate newly identified projects for Armor School training, re-evaluate projects that have moved or significantly changed from those evaluated in the BRAC 2005 and Transformation EIS, accommodate Army-growth decisions, and support the MCOE standup. The need is to provide sufficient operational facilities, training areas – including ranges and maneuver areas, and infrastructure to accommodate the consolidated Armor and Infantry Mission of the MCOE and the increased military personnel and students. To best meet its purpose and need, DOA identified Alternative A as its preferred alternative.

The proposed action includes the construction, operation, and maintenance of additional facilities (community services, hospital replacement, personnel support, classroom, barracks, and dining facilities), training areas, including ranges and maneuver areas, drinking-water-treatment plant upgrade and expansion with the construction of a new intake from the Chattahoochee River, rail-loading facility expansion, and two road projects. Construction will occur within the Georgia boundaries of the Fort in three cantonment areas: Main Post, Sand Hill, and Harmony Church. The proposed action will create 9,226 "new disturbed" acres. Three projects account for the largest disturbed acreage: 1) the two road projects (1,896 acres total), 2) the North Range (2,269 acres total), and 3) the South Range (3,788 acres total).

DOA evaluated three alternatives. The no action alternative is the proposed action as described in the 2006 *BRAC 2005 and Transformation EIS*. While Alternative A is the preferred alternative, the major difference between Alternative A and B appears to be one (Alternative A) versus two (Alternative B) multipurpose machine gun 2-7.62 mm ranges for the Range complex

located south of Highway 27/280. Another distinction is whether the "Southern Training Area Infrastructure" is located south (Alternative A) or north (Alternative B) of Highway 27/280. Alternative A would disturb 10,741 acres while "B" would disturb 19,012 acres of land. Alternative A has the least projected aquatic habitat impacts (1841 versus 1930 acres) but the greatest wetland area impacts (908.9 versus 886 acres).

## EIS Rating

EPA rates this draft EIS EC-2 (environmental concerns with more information requested). This rating primarily reflects the proposed action's potential impacts to aquatic habitats, water resources, and wetlands, and the corresponding need for mitigation. It is the range and maneuver areas that will have the greatest impact to these resources. EPA notes the efforts to minimize impacts, e.g., while stream floodplains on the Fort are extensive, military training within these floodplains is minimal. However, compounding EPA's concerns are the existence of a number of impaired-listed streams within the area of the proposed action.

EPA is also concerned with the ranges potential where live-fire is used to create future toxic hot spots by accumulating lead, tungsten, and other potentially hazardous/toxic materials associated with spent munitions. The range-associated berms represent emerging mini toxic dump sites as they serve to collect spent ammunition (lead and tungsten) that over time may accumulate into concentrations that will threaten surface and ground water supplies, e.g., lead contamination associated with storm-water runoff, and will require costly clean up. EPA believes there are solutions, i.e., shock-absorbing concrete (SACON), that if enacted now will prevent this concern.

Thank you for the opportunity to review and provided comments. If you wish to discuss this matter further, please contact Beth Walls (404-562-8309 or <a href="walls.beth@epa.gov">walls.beth@epa.gov</a>) of my staff. Enclosed are EPA's comments and a copy of EPA's EIS rating system criteria.

Sincerely,

Heinz J. Mueller, Chief NEPA Program Office

Office of Policy and Management

Enclosures

<sup>&</sup>lt;sup>3</sup> P. 4-144.

# U.S. ENVIRONMENTAL PROTECTION AGENCY ENVIRONMENTAL IMPACT STATEMENT (EIS) RATING SYSTEM CRITERIA

EPA has developed a set of criteria for rating Draft EISs. The rating system provides a basis upon which EPA makes recommendations to the lead agency for improving the draft.

### RATING THE ENVIRONMENTAL IMPACT OF THE ACTION

- LO (Lack of Objections): The review has not identified any potential environmental impacts requiring substantive changes to
  the preferred alternative. The review may have disclosed opportunities for application of mitigation measures that could be
  accomplished with no more than minor changes to the proposed action.
- EC (Environmental Concerns): The review has identified environmental impacts that should be avoided in order to fully protect
  the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that
  can reduce the environmental impact.
- EO (Environmental Objections): The review has identified significant environmental impacts that should be avoided in order to
  adequately protect the environment. Corrective measures may require substantial changes to the preferred alternative or
  consideration of some other project alternative (including the no action alternative or a new alternative). The basis for
  environmental objections can include situations:
  - 1. Where an action might violate or be inconsistent with achievement or maintenance of a national environmental standard;
  - 2. Where the Federal agency violates its own substantive environmental requirements that relate to EPA's areas of jurisdiction or expertise;
  - 3. Where there is a violation of an EPA policy declaration;
  - 4. Where there are no applicable standards or where applicable standards will not be violated but there is potential for significant environmental degradation that could be corrected by project modification or other feasible alternatives; or
  - 5. Where proceeding with the proposed action would set a precedent for future actions that collectively could result in significant environmental impacts.
- EU (Environmentally Unsatisfactory): The review has identified adverse environmental impacts that are of sufficient magnitude
  that EPA believes the proposed action must not proceed as proposed. The basis for an environmentally unsatisfactory
  determination consists of identification of environmentally objectionable impacts as defined above and one or more of the
  following conditions:
  - 1. The potential violation of or inconsistency with a national environmental standard is substantive and/or will occur on a long-term basis;
  - 2. There are no applicable standards but the severity, duration, or geographical scope of the impacts associated with the proposed action warrant special attention; or
  - 3. The potential environmental impacts resulting from the proposed action are of national importance because of the threat to national environmental resources or to environmental policies.

#### RATING THE ADEQUACY OF THE ENVIRONMENTAL IMPACT STATEMENT (EIS)

- I (Adequate): The Draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the
  alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer
  may suggest the addition of clarifying language or information.
- 2 (Insufficient Information): The Draft EIS does not contain sufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the Draft EIS, which could reduce the environmental impacts of the proposal. The identified additional information, data, analyses, or discussion should be included in the Final EIS.
- 3 (Inadequate): The Draft EIS does not adequately assess the potentially significant environmental impacts of the proposal, or the reviewer has identified new, reasonably available, alternatives, that are outside of the spectrum of alternatives analyzed in the Draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. The identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. This rating indicates EPA's belief that the Draft EIS does not meet the purposes of NEPA and/or the Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised Draft EIS.

#### **Air Quality**

The EIS speaks to construction activities having the potential of exceeding GAR 391-2-1.02(2)(n) 20% opacity rule for fugitive dust, depending upon the onsite controls used and the local meteorological conditions. However, the EIS is silent as to the potential for exceeding fugitive dust emissions associated with the range and maneuver activities associated with the North and South Range Areas. EPA recommends the final EIS discuss this potential for fugitive dust emissions.

## **Drinking Water and Waste Water Systems**

The EIS should append a copy of the drinking water and wastewater treatment plant analyses for review. For example it is unclear whether the wastewater treatment plant is capable of handling the increased demand associated with the projected additional potable water treatment capacity.

Additionally it is unclear whether the Fort Benning water treatment plant will be refurbished or whether increased capacity will be addressed by upgrading other Columbus Water Works (CWW) treatment plants. Of concern is the fact that Fort Benning's water treatment plant has a history of elevated disinfection byproducts (TTHMs, total trihalomethanes). If the plant at Ft. Benning is to be refurbished, including the addition of the 750,000 gallon storage tank, disinfection byproduct formation could result in levels exceeding the TTHM maximum contaminant level (0.080 mg/L). Consequently, considerations for increased TTHM formation resulting from increased residence associated with the additional storage tank should be included in treatment plant upgrades.

#### **Noise Analysis**

- The presentation of the data for all the alternatives on the same table would aid the public reviewer to compare differences in the size of the area affected by the proposed action by each alternative.
- The FEIS should provide data for the differences in the number of homes and number of people living in these homes – affected by each alternative and caliber noise zones. Of particular interest would be affected off-Post residences/ residents.
- The FEIS should include an approximate timeframe (months/years) for construction to help determine the magnitude of construction impacts to the affected public.
  - o We appreciate the documentation of noise levels generated by construction equipment within 50 feet as reference.

- o Noise from stationary construction equipment (e.g., pumps) can also be reduced at the source through shielding constructed around the equipment.
- All mobile equipment should be tuned to manufacturer's design specifications for optimal noise attenuation (e.g., mufflers, engine housings, etc.)
- The noise complaint line for Ft. Benning should remain active and that notification of significant noise events be provided to surrounding residents, particularly when noisy activities will not be restricted from 12:00am to 6:00 am. Deviations from this schedule should also be announced to the affected public through Ft. Benning's website, news media readily available to everyone, and local social groups, e.g., churches, garden clubs, Rotary clubs, etc.
- Spot (or any requested) noise monitoring inside and outside the nearest affected
  off-Post residences be provided during average day and noisy mission events
  during all seasons (particularly in winter when leaf cover is absent). This would
  document off-Post noise levels and provide a basis for possible needs for noise
  mitigation.
- Mitigation methods that could provide some noise attenuation from noisy Ft.
  Benning activities include earthen berms and evergreen tree cover located
  between the noise source and off-Post residential noise receptors. Home
  soundproofing would also provide some noise relief inside homes.
- New and existing land use in the area should become and/or remain compatible
  with the noise levels of Ft. Benning's missions, and that DOD influence local
  zoning officials and realtors in this regard to the extent feasible.

### **Emerging Contaminants**

Executive Order 13423 calls for agencies to reduce the quantity of toxic and hazardous chemicals acquired, used, or disposed of.<sup>2</sup> DoD's assessments of Enterprise risk have identified several emerging contaminants<sup>3</sup> suggested for watching (beryllium, dicholorobenzenes, dioxin, DNT, lead, nanomaterials, NDMA, PBDEs& PBBs, PFOS/PFOAs TCP, tetrachloroethylene, 1,4-dioxane) and action (Chromium VI, Naphthalene, Perchlorate, RDX, and TCE).<sup>4</sup> These emerging contaminants represent the potential for adverse health effects on operating forces, DoD employees, and/or the

<sup>2</sup> Strengthening Federal Environmental, Energy, and Transportation Management (January 24, 2007) §2(e).

<sup>&</sup>lt;sup>1</sup> P. 4-103.

<sup>&</sup>lt;sup>3</sup> Emerging contaminant is defined as chemicals and materials with perceived or real threat to human health or the environment and either no peer reviewed health standard or an evolving standard because of insufficient human health data/science, new detection limits, and new exposure pathways.

<sup>&</sup>lt;sup>4</sup> Answering DOD's emerging contaminant challenge <a href="http://www.fedcenter.gov/\_kd/Items/actions.cfm?action=Show&item\_id=7404&destination=ShowItem#508,7">http://www.fedcenter.gov/\_kd/Items/actions.cfm?action=Show&item\_id=7404&destination=ShowItem#508,7</a>

public, reducing training/readiness and use restrictions on ranges, and increased operation and maintenance and/or clean up costs, which amount to a drain or diversion of resources from mission needs. Perchlorate is reportedly a growing issue that must be proactively addressed by DoD.<sup>5</sup> The EIS has not discussed the potential for use and increased use of these contaminants in light of the proposed action and how they may pose human heath and environmental risks.

## Emerging toxic hot spots

The Fort's range areas, particularly now with the expected increase in student numbers undertaking training in the Armor and Infantry schools, and their associated berms represent emerging mini toxic dump sites. The soil berms serve to collect spent ammunition (lead and tungsten) that over time will accumulate into concentrations that will threaten surface and ground water supplies, e.g., lead contamination associated with storm-water runoff, and will require costly clean up.

Furthermore, DoD Directive Number 3200.15 states DoD's policy that planning and management for the DoD range sustainment program shall identify range environmental considerations and safety factors that may influence current or future range activities, including reasonably anticipated future uses if the range has a finite withdrawal or lease period that shall not be renewed. Additionally, DoD Directive Number 4715.11 states DoD's policy is to ensure the long term viability of operational ranges while protecting human health and the environment, limit the potential for explosive mishaps and the damaging effects of such to personnel, operational capability, property, and the environment, design and use operational ranges and the munitions used on them to minimize harmful environmental impacts and to promote resource recovery and recycling.

Technologies exist that could minimize or eliminate this concern. For example, products that can absorb projectiles and eliminate ricochets, e.g., shock-absorbing concrete (SACON) and devising bullet traps that use SACON in their design. The energy absorbing nature of SACON realizes sound absorbing characteristics that may help with reduce range-related noise. Moreover, SACON can be crushed, sieved, and recycled to make more of it. According to the US Army Corps of Engineers web site, SACON buildings have been constructed as live-fire training facilities for military operations in urban terrain exercise and at several Army live-fire training villages.

<sup>&</sup>lt;sup>5</sup> DoD Sustainable Ranges Initiative 30<sup>Th</sup> Environmental and Energy Symposium and Exhibition (April 2004). <a href="http://www.dtic.mil/ndia/2004enviro/tues/walsh.ppt">http://www.dtic.mil/ndia/2004enviro/tues/walsh.ppt</a>

<sup>&</sup>lt;sup>6</sup> January 10, 2003

<sup>&</sup>lt;sup>7</sup> § 4 (May 10, 2004)

<sup>&</sup>lt;sup>8</sup> An example of such a design can be found at <a href="http://www.terrancorp.com/sacon/files/sacontri/sacontri.htm">http://www.terrancorp.com/sacon/files/sacontri/sacontri.htm</a>. <sup>9</sup>SACON Shock-Absorbing Concrete product sheet is available at

http://www.erdc.usace.army.mil/pls/erdcpub/docs/erdc/images/sacon.pdf

#### Water Resources

EPA's biggest concern with the proposed action is the potential impacts to aquatic habitats, water resources, and wetlands. EPA notes the efforts to minimize impacts, e.g., while stream floodplains on the Fort are extensive, military training within these floodplains is minimal. EPA also notes that it is the range and maneuver areas that will have the greatest impact to these resources. Compounding these concerns is the existence of a number of impaired-listed streams within the area of the proposed action.

The Georgia Environmental Protection Division (GEPD) has identified 31 impaired stream segments within the Chattahoochee River Basin (CRB) due to sedimentation or fecal coliform. The proposed action has the potential to affect six stream segments in the Chattahoochee River basin that have been identified as "impaired" due to sedimentation or fecal coliform. Six impaired stream segments have the potential to be affected by the proposed action with regard to sediment loading while two others have a "fecal-coliform" impairment status. One has both a "fecal-coliform" impairment and "fish consumption" restriction (PCBs) status. GEPD has identified 79 impaired stream segments within the CRB due to fecal coliform.

Alternative A would disturb 10,741 acres while "B" would disturb 19,012 acres of land and has the potential to affect the amount of sediment entering waterways occurring within the Fort and other downstream water resources. <sup>13</sup> The EIS attributes the sedimentation impairment may be due to past land-use practices, e.g., farmland use – row crops was a major source of sediment. The existing TMDL is based on the hypothesis that an impaired watershed having annual sediment loading rates similar unimpaired streams would remain stable and allow the stream to repair itself over time. <sup>14</sup>

The following outlines EPA's concerns that should be addressed in the final EIS regarding the proposed action's impacts to aquatic habitat, water resources, and wetlands.

USAIC Regulation 210-4, stream fording and crossing within the Installation with wheeled and tracked vehicles currently is approved for 8 locations. Articulating concrete mats are used to harden low-water crossing sites along tank trails.<sup>15</sup>

The EIS does not describe the associated water-resource related impacts in terms of sediment loadings to impaired streams during maneuver training. Are the eight approved stream crossings impacting any streams with "sediment" impairment status? (e.g., the list provided in Table 4.11-1<sup>16</sup>)? How well do the Best Management Practices (BMPs) work? How have they mitigated impacts? Do crossings at certain times of the

<sup>&</sup>lt;sup>10</sup> P. 4-144.

<sup>&</sup>lt;sup>11</sup> P. 4-141.

<sup>&</sup>lt;sup>12</sup> P. 4-142.

<sup>&</sup>lt;sup>13</sup> P. 4-136.

<sup>&</sup>lt;sup>14</sup> P. 4-142.

<sup>&</sup>lt;sup>15</sup> P. 4-144.

<sup>&</sup>lt;sup>16</sup> P. 4-144.

year result in more impact than others? The EIS should discuss these impacts and apply this knowledge to the proposed action's "up to" 105 new water crossings to be established as part of its environmental impacts analysis.<sup>17</sup>

The Main Post storm water drains directly into the Chattahoochee River through a storm-drain system. Other on-Post storm water is collected and discharged through a series of culverts, ditches, swales, natural seepage, and overland flow. Sand Hill, Harmony Church, and training compartments storm water drain directly or indirectly into nearby surface water bodies. 18

It is unclear from the EIS whether the storm-water point discharges from the Cantonment areas into the Chattahoochee and other surface water bodies are directly impacting any of the impaired waters listed in Table 4.11-1? If so, what is the potential for construction activities to further contribute to their impairment status? For example of the proposed BMPs, how effective are they at preventing sediment from impacting stream segments? The EIS does not discuss whether and how contractor operations will be monitored by the Fort and whether the contract penalizes contractors for releasing sediments into any impaired waters associated with their activities. The goal is to prevent releases not to create a situation requiring state enforcement of its water protection laws.

Regarding the Harmony Church Cantonment Area, four projects (~204 disturbed acres) have the potential to adversely affect water resources (Table 4.11-2).<sup>19</sup> Unclear from this table whether these projects potentially impact any of the GEPD identified impaired-stream segments within the CRB. And regarding the Sand Hill Cantonment Area, all ten projects could potentially directly affect water resources. It appears that Tiger Creek is one of the potentially impacted streams listed both in Table 4.11-3<sup>20</sup> and Table 4.11-1.<sup>21</sup> It is unclear if any streams listed in Table 4.11-3 should be impacted by the proposed action, would they in turn directly or indirectly impact any GEPD-listed impaired stream segments? The EIS should address this issue.

Minor impacts such as soil erosion within the construction sites and deterioration of stream buffers are expected to occur even with properly implemented BMPs and other mitigation measures.<sup>22</sup>

The EIS is unclear what it means by "deterioration of stream buffers," and as written appears inconsistent with Georgia's Erosion and Sedimentation Act which implements stream buffer regulations stating that any proposed land disturbing activity within a 25-foot buffer of a state stream would require a state Stream Buffer Variance.<sup>23</sup>

<sup>&</sup>lt;sup>17</sup> P.4-154.

<sup>&</sup>lt;sup>18</sup> P. 4-89.

<sup>&</sup>lt;sup>19</sup> P. 4-149.

<sup>&</sup>lt;sup>20</sup> P. 4-150.

<sup>&</sup>lt;sup>21</sup> P. 4-141.

<sup>&</sup>lt;sup>22</sup> P. 4-149.

<sup>&</sup>lt;sup>23</sup> P. 4-146.

Other than stating that no projects are proposed within 100' of the state-designated Chattahoochee River corridor,<sup>24</sup> the EIS appears not to discuss where and how the proposed action will impact stream buffers, the degree of impact, whether any stream buffer variances are being sought and whether they are being sought for listed impaired streams, particularly those listed as "sediment" impaired.

## **Aquatic Habitats Potentially Impacted**

Tables 4.13-9<sup>25</sup> and 4.13-15<sup>26</sup> have totals listed that do not appear to be accurately reflective of their assigned columns. Minor discrepancies exist in the totals for columns labeled "Range Impacts (%)" for both alternatives. The EIS' total is 1931 acres when the actual total appears to be 1930. Similar minor discrepancies exist for both the "Non-Range Impacts (acres) and (%)" columns for both alternatives.

However a significant discrepancy appears exist in the "Total Impacts" column for Alternative A. The EIS' total is 1816 acres when the actual total appears to be 1876. And significant discrepancies appear in the "Range Impacts," and "Total Impacts" percent columns for both alternatives. For example, the EIS' total "Range Impacts" is 6.1 percent when the actual total appears to be 47.2 percent (Alternative A) while the EIS' total is 6.4 percent when the actual total appears to be 54.1 percent (Alternative B).

And, the EIS' total "Total Impacts" is 6.2 percent when the actual total appears to be 47.1 percent (Alternative A). And the EIS' total is 6.5 percent when the actual total appears to be 49.3 percent (Alternative B). The tables as presented imply that all the percent numbers listed in these columns are additive, which appears to be the case for the acreage columns, but the total percent numbers do not reflect this. Moreover, these significant discrepancies do not appear to be addressed in the text. The question is raised whether additive errors are contained in these two tables. These discrepancies should be addressed in the FEIS.

#### Wetlands Potentially Impacted

Wetland and aquatic habitats occur in the road construction and improvement areas, Harmony Church, Main Post, and Sand Hill cantonment areas, and both the North and South ranges.<sup>27</sup> Avoidance and mitigation measure would reduce the extent and severity of the adverse impacts but the residual impacts to freshwater habitats and wetlands would be significant. Mitigation measures would not avoid or alleviate impacts to all aquatic habitats. Ordnance impact zones, stream crossings, sedimentation, and erosion would degrade natural features and processes of aquatic and wetland habitats.<sup>28</sup>

<sup>&</sup>lt;sup>24</sup> P. 4-149.

<sup>&</sup>lt;sup>25</sup> P. 4-229.

<sup>&</sup>lt;sup>26</sup> P. 4-246.

<sup>&</sup>lt;sup>27</sup> P.-187.

<sup>&</sup>lt;sup>28</sup> P. 4-256.

It appears, though it wasn't readily discernable from the EIS, that the maximum total potential wetland impact is around 900 acres, most of this is associated with clearing for ranges. EPA was unable to determine where the individual stream impacts were discussed, which will need to be done as the proposed action involves numerous stream crossings. It appears the proposal to mitigate the wetland impacts is to purchase credits from the nearby Kolomoki Plantation and/or Upatoi Creek mitigation banks.<sup>29</sup> These banks also have stream credits if needed. Both are acceptable, though EPA prefers the Upatoi because it is in the immediate watershed being impacted. Under recent guidance, the Army must consider the use of commercial mitigation banks as their first option for mitigation (as opposed to doing it themselves). However, if they have a site on the fort that could really benefit from restoration or enhancement, the guidance would allow this to be considered. At this time, EPA's review of wetland and stream impacts is limited until the individual projects come through, when EPA can then analyze them for "avoidance" and "minimization" aspects.

The EIS directs: "[f]or mitigation impacts to wetlands, refer to Section 4.10.3.<sup>30</sup>" And Section 4.10.3 states that "no mitigation measures are required beyond those prescribed under existing federal and state laws, regulations, and permit requirements to minimize, avoid, or reduce impacts.<sup>31</sup>" But the EIS does not describe what these impacts and measures are. The EIS should describe what permits will be sought where and for the amount of wetlands impacts to adequately inform the decision maker and the public that this EIS is not comprehensive. The EIS should indicate whether more details for these impacts will be forthcoming or addressed in detail in future EISs associated with future permits and provide a listing of these permits and brief description of the total impacts and where and type (e.g., a table). The EIS as written provides a generalized indication of what could happen sometime in the future, which is insufficient.

Moreover the proposed 900 acre wetlands impact in its totality is significant as it is equivalent to 40% of annual statewide-wetlands impacts (i.e., Georgia looses 2,000 wetlands acres/year<sup>32</sup>). While the proposed action does not communicate that all 900 acres will be lost in one year, it still represents a significant wetland impact. Particularly in light of the following EIS' statements:

Impacts to several of the aquatic and wetland habitat types would occur. These
impacts may include direct disturbance due to drainage, excavation and filling to
support buildings and pavement, low water crossings, clearing for AT/FP setbacks,
construction staging areas, vehicular traffic, and/or foot traffic. Indirect impacts may
occur downstream due to sedimentation, erosion, channelization, contamination,
increased runoff, storm-water diversion, and changes in fire regime.<sup>33</sup>

<sup>&</sup>lt;sup>29</sup> P. 4-255.

<sup>&</sup>lt;sup>30</sup> P. 4-222.

<sup>&</sup>lt;sup>31</sup> P 4-132

<sup>&</sup>lt;sup>32</sup> Personal communication with Bob Lord of the EPA Region 4 Wetlands Program.

<sup>&</sup>lt;sup>33</sup> P. 4-228.

- The affected aquatic and wetland habitats would not necessarily be eliminated but their functions and values would be degraded by direct or incidental filling, vegetation removal, alteration of hydrology, and sediment and sedimentation inputs.<sup>34</sup>
- Mitigation measures listed in Section 4.13.3 would reduce the extent and severity of impacts, but the residual impacts to aquatic habitats and wetlands would still be significant. Mitigation measures would not avoid or alleviate significant impacts to all aquatic and wetland habitats, particularly in range areas that cannot be configured to avoid wetlands. Heavy use impact areas associated with targets, stream crossings, sedimentation, and erosion would degrade natural features and processes of aquatic communities. A substantial area of wetland communities would be lost or decreased, degrading ecosystem functions that include the maintenance of water quality and associated fish and wildlife populations.<sup>35</sup>

There are no adverse wetlands impacts when cutting trees for line of sight if a low-impact method of tree removal is used to minimize soil disturbance and when stumps and roots can be left in place.<sup>36</sup>

The EIS is unclear whether tree cutting would be significant to change one wetland type into another wetland type, which would represent an adverse wetland impact, which would be inconsistent with the above statement. The significance would depend upon the amount of wetland habitat change and the type, which are not discussed in the EIS and should be so discussed.

Alternative A would result in potential significant effects to aquatic and wetland habitats, including stream banks. Construction, demolition, road upgrades, and range projects would impact approximately 3,141 acres of aquatic and wetland habitats. Range and non-range projects would impact approximately 56 acres of freshwater aquatic habitat (impoundments and flowing streams) and 7.2% of the total existing aquatic and wetland area at the Fort.<sup>37</sup>

These numbers appear to be inconsistent with Table 4.13-9, which indicate that approximately 1,876 acres of aquatic and wetlands would be impacted. Moreover, Table 4.13-9 indicates 1,816 acres of freshwater aquatic habitat not 56 acres will be impacted. And 7.2% of the total existing aquatic and wetland area at the Fort is not indicated in Table 4.13-9. The text does not and should clarify and explain these discrepancies.

#### **Transportation**

The EIS is unclear as to whether the Fort's traffic causes, and to what extent it causes off-post related traffic issues pre and post proposed action, i.e., how it affects

<sup>&</sup>lt;sup>34</sup> P. 4-230.

<sup>&</sup>lt;sup>35</sup> P. 4-230.

<sup>&</sup>lt;sup>36</sup> P. 4-229.

<sup>&</sup>lt;sup>37</sup> P. 4-230.

outlying communities, particularly major roads off post that the public have to use as no other alternatives are reasonably available. The EIS should include discussions related both to construction-related traffic and maneuvers training related traffic issues.

# **Correction Needed**

Gerald Miller is not the Commander of the Savannah District Corps of Engineers as indicated on page 6-1. He was a former, now retired EPA Region 4 NEPA Program scientist.

## **Green Building Designs and Principles**

Green-building principles include the efficient use of energy, water, and other resources, the reduction of waste, pollution, and environmental degradation during a building's lifecycle by considering building location, design, construction, operation, maintenance, and removal. Moreover green building designs and principles are consistent with Executive Order 13423 goals for federal agencies to improve energy efficiency and reduce green house gas emissions.

Buildings in the United States account for 40-percent of total energy use, 12-percent of the total water consumption, 68-percent of total electrical consumption, 38-percent of total CO<sub>2</sub> emissions, and 60-percent of total non-industrial waste generation. On average, green buildings reportedly reduce energy use by approximately 30-percent, CO<sub>2</sub> emissions by 35-percent, water use by 30 to 50-percent, and results in a waste cost savings of 50 to 90-percent.<sup>38</sup> Additionally, Executive Order 13423 directs agencies to ensure that new building construction and major renovations comply with the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings*.

The proposed action includes the construction, operation, and maintenance of additional facilities (community services, hospital replacement, personnel support, classroom, barracks, and dining facilities), training areas, including ranges and maneuver areas, drinking-water-treatment plant upgrade and expansion with the construction of a new intake from the Chattahoochee River, rail-loading facility expansion, and two road projects.

### Recycle Building-Demolition Waste

One aspect of green building is the reduction of waste and environmental degradation associated with land filling construction and demolition debris without recycling usable construction and demolition debris, e.g., the use of recycled materials in lieu of raw. Construction and demolition debris includes waste from building and

<sup>38</sup> http://climateintel.com/?s=Greening+of+affordable+housing

transportation-related construction, renovation, and removal including land-clearing debris.

The EIS mentions that the additional amount of solid waste generated as a result of the new MCOE would result in a substantial increase from current levels, requiring renegotiation of the current and long-term solid waste management contract. The privately-owned solid waste landfills in the region have adequate capacity (10-million ton capacity over the next 75 years) to accommodate the increased demand the Fort would be placing on the landfills.<sup>39</sup> However the EIS lacks estimates of construction debris volume to be generated and requiring disposal.

# Use Recycled Building Materials in New Building Construction

The EPA recommends DOA consider using recycled materials in its numerous proposed construction projects. Recycled materials are energy efficient, e.g., recycled polystyrene and wood block building products have energy efficiency ratings above that of conventional insulation and building materials. Recycled building products save materials from the landfill. Plastics that would otherwise go into a landfill can be recycled and turned into building blocks, reducing the need to harvest lumber from forests. Recycled wood building projects save wood from being wasted and decrease the need to harvest forests. Many recycled wood or polystyrene building materials are more fire resistant that conventionally built houses. Recycled materials include: polystyrene, concrete, and wood cement building forms.

# Roads and Parking Lots

One of the three projects accounting for the largest disturbed acreage are the two road projects (1,896 acres total). There are options available to the DOA to consider for these new projects, e.g., re-using material associated with the demolition of any buildings as part of the Cantonment construction projects, using green asphalt, or pervious paving materials. The EIS did indicate that concrete or brick material would be crushed by construction contractors and recycled to the greatest extent possible as roadbed stabilization material throughout the Post and that with the preferred alternative; the amount of recyclable debris should be readily consumed for road improvements. However, any building demolition activities that may realize recyclable asphalt shingles could be blended for pavement material for the proposed parking-lot pavement needs.

Additionally, green asphalt reflects a process that reclaims or recycles up to 50-percent of the existing asphalt pavement and mixes it with new materials at a lower temperature than previously achievable in the industry. The process results in reduced green-house gas emissions. This asphalt mix is alleged to be equal to or better than the mixes now being used and could save eleven-percent of fuel costs over existing production methods.

<sup>&</sup>lt;sup>39</sup> P. 4-94.

<sup>&</sup>lt;sup>40</sup> P. 4-94.

### Consider Energy-Efficiency

Executive Order 13423 directs agencies to improve energy efficiency and reduce greenhouse gas emissions (GHG) through reduction of energy intensity. Energy efficiency also includes reducing heat flow in and out of buildings, using windows to maximize solar lighting and reducing the need for electrical lighting, using self-dimming lights and energy-efficient light bulbs when natural lighting is unavailable, incorporating a heat-reflecting roof (or green roof) and windows, and using other energy efficient products and practices, e.g., the ENERGY STAR program. The EIS is silent on the incorporation of these types of energy efficiencies and its preferred action would cut down trees that could reduce the solar energy heating up the building resulting in increased air-conditioning demands and corresponding energy use and GHG emissions.

## Water Stewardship

While drought is a normal component of the Southeastern US climate system, its negative impacts on Georgia's environment, economic, and social systems can be major. There have been 13 long-term, severe droughts impacting the state over the past 325 years and many of Georgia's native ecosystems depend on drought for health and survival. Consequently water management and drought mitigation plans should take known natural variability in the climate system, which for Georgia means that a drought of two years or more at least once every 25 years should be expected regardless population-growth associated pressures.<sup>42</sup>

In 2008, Georgia had an estimated population of 11,134,710. As of 2006, Georgia was the ninth most populous state. Its population has grown 44.5 percent (2,885,725) since 1990, making it one of the fastest-growing states in the country. Beginning with the 1990s, Georgia took over as the fastest-growing state in the South with a 26 percent population increase during the decade, surpassing its neighbor, Florida, which had held the title for every decade in the twentieth century prior to the 1990s. 43

According to the State Climatologist, drought has occurred, will occur, and no evidence of future change is expected. What has changed and is expected to continue to grow is the state's population. In 1960, the state population was recorded at 4.5 million while in 2008; Metro Atlanta reports a population exceeding 4.5 million. There are more people but the same amount of water.

Additionally, Executive Order 13423 directs agencies to reduce water consumption intensity through life-cycle cost-effective measures and requires acquisition

<sup>&</sup>lt;sup>41</sup> ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy, see: <a href="http://www.energystar.gov/index.cfm?c=about.ab">http://www.energystar.gov/index.cfm?c=about.ab</a> index

<sup>&</sup>lt;sup>42</sup> Historical Droughts in Georgia and Drought Assessment and Management (2003) David Stooksbury, State Climatologist and Assistant Professor of Engineering and Atmospheric Sciences, The University of Georgia.

<sup>43</sup> http://www.newworldencyclopedia.org/entry/Georgia (U.S. state)

of goods and services to use sustainable environmental practices, including water-efficient products. Consequently, the proposed action may represent an opportunity to initiate installation of a drought-tolerant or water conservation infrastructure, e.g., collecting rain water, minimizing landscapes requiring watering, and minimizing stormwater runoff associated damage from parking lots and other impervious surfaces.

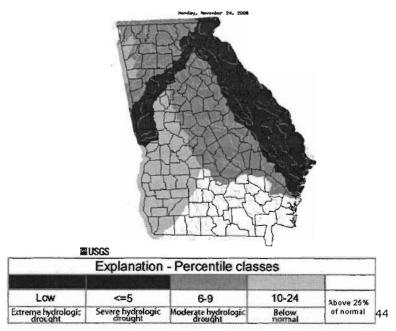


Figure 1 - Georgia Drought Conditions Map

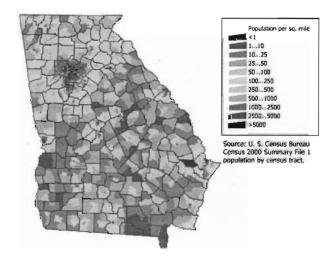


Figure 2 - Georgia Population Growth Estimates

<sup>44</sup> http://ga.water.usgs.gov/drought/drought.html

## Water Efficiency

The proposed action includes the construction, operation, and maintenance of additional facilities: community services, hospital replacement, personnel support, classroom, barracks, and dining facilities, and training areas. EPA encourages all federal agencies to include *WaterSense*<sup>45</sup> products and services in their implementation strategies. EPA launched the *WaterSense* program in 2007 to promote water-efficiency and protect the future of the nation's water supply. For example, *WaterSense* is helping consumers identify high performance, water-efficient toilets that can reduce water. Toilets account for nearly 30 percent of residential indoor water consumption and are a major source of wasted water due to leaks and/or design inefficiency.

The WaterSense program sets specifications for the labeling of products that are at least 20% more efficient than the current standards while performing as well or better than their less-efficient counterparts. Once a manufacturer's product is certified to meet WaterSense specifications by an independent third party, they can use the label on their product. All water savings realized through the use of WaterSense labeled products and services have a corresponding reduction in energy consumption, associated greenhouse gas emissions and energy and water costs.

### Reduce landscapes requiring watering

EPA also encourages the use of water that is not treated to drinking water quality standards. Using treated potable water for any landscape irrigation may not be the best approach in light of water efficiencies and drought conditions. By using other water sources, e.g., grey water<sup>47</sup> and storm water, the demand for treated water could be decreased. Any decrease in treated water used could realize a decrease in the associated energy used as less water is required to be pumped and treated. The corresponding decrease in energy needs may also facilitate reduced GHG emissions associated with the proposed action in addition to reduced energy and water costs, particularly during those economic cycles when these supplies are expensive and limited.

## Storm-Water Management

The proposed action will create 9,226 "new disturbed" acres and undefined thousands of newly impervious acreage. EPA would encourage Fort Benning to consider green roofs, rain gardens, and using storm water collection systems for

<sup>45</sup> http://www.epa.gov/watersense/

<sup>&</sup>lt;sup>46</sup> National Water Program Strategy: Response to Climate Change, Office of Water, U.S. EPA, September 2008, see: <a href="http://www.epa.gov/water/climatechange/index.html">http://www.epa.gov/water/climatechange/index.html</a>

<sup>&</sup>lt;sup>47</sup> EPA has prepared *Guidelines for Water Reuse* that examines opportunities for substituting reclaimed (or grey) water where potable water quality is not required. These guidelines are available in PDF format at two locations: <a href="http://www.epa.gov/ord/NRMRL/pubs/625r04108/625r04108.pdf">http://www.epa.gov/ord/NRMRL/pubs/625r04108.pdf</a> and <a href="http://www.epa.gov/region09/water/recycling/index.html">http://www.epa.gov/region09/water/recycling/index.html</a>

landscape irrigation. A green roof is a roof of a building that is partially or completely covered with vegetation and soil, or a growing medium, planted over a waterproofing membrane.

The DOA could also consider designing pervious parking lots and unpaved roads and tank trails to allow storm-water infiltration into the ground without runoff into the neighboring surface-water bodies. One option would be the strategic use of rain gardens, planted depressions designed to absorb rainwater runoff from impervious urban areas like roofs, driveways, walkways, and compacted lawn areas.

A rain garden facilitates storm water soaking into the ground instead of flowing into storm drains and surface waters and minimizes erosion, water pollution, flooding, and diminished groundwater. Rain gardens can cut down on the amount of pollution reaching creeks and streams by up to 30 percent. Rain gardens could be strategically situated to minimize surface runoff associated with all of the proposed construction projects.

EPA recommends DOA consider developing an infrastructure that will facilitate the appropriate use of storm-water runoff for landscaping irrigation, which could contribute toward meeting landscape-irrigation needs and ground-water recharge and thereby serving to cleanse the storm water prior to recharging both ground and surface water bodies.

#### **EPA Information Sources**

EPA has links on its web pages to a multitude of information resources for technical assistance to Fort Benning its sustainability efforts. These include:

The EPA Region 4 Office of Pollution Prevention and Innovation (OPPI) vision is to use innovation to promote and fully integrate the principles of Pollution Prevention and Environmental Stewardship into Region 4's actions, policies and employee ethic. <a href="http://www.epa.gov/Region4/p2/">http://www.epa.gov/Region4/p2/</a> The Region 4 P2 contact is Pam Swingle, who can be reached at either 404-462-8482 or <a href="mailto:swingle.pam@epa.gov">swingle.pam@epa.gov</a>.

Sustainability means "meeting the needs of the present without compromising the ability of future generations to meet their own needs." This site provides information on scores of EPA programs supporting sustainability that focus on the <u>Built Environment</u>; <u>Water, Ecosystems and Agriculture</u>; <u>Energy</u>; and <u>Materials & Toxics</u>.

http://www.epa.gov/Sustainability/index.htm

EPA's *Climate Change* Site offers comprehensive information on the issue of climate change in a way that is accessible and meaningful to all parts of society – communities, individuals, business, states and localities, and governments. http://www.epa.gov/climatechange/

Environmentally Preferable Purchasing Program: Paving the Road to Success, EPA742-R-97-007 (November 1997), can be found at <a href="https://www.epa.gov/epp/pubs/case/eppdod1.pdf">www.epa.gov/epp/pubs/case/eppdod1.pdf</a> This is a case study of a pilot procurement project, the DOD Parking Lot Renovation case study, which describes DOD's efforts to introduce environmentally preferable purchasing into a 5-year, \$1 million-per-year parking-lot renovation contract.

EPA's Recycle - Construction & Demolition Materials web site - EPA has compiled an extensive list of success stories, documents, factsheets, case studies, and international resources related to construction and demolition materials management. <a href="http://www.epa.gov/epawaste/conserve/rrr/imr/cdm/pub\_nav.htm">http://www.epa.gov/epawaste/conserve/rrr/imr/cdm/pub\_nav.htm</a>